



Coates Screen

# Product Data Sheet

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## SCREEN PRINTING INKS PK

### APPLICATION

Screen printing inks PK are especially suitable for polymethacrylates (acrylic glass, cellulose acetobutyrate, rigid and plasticized PVC, polystyrene and polystyrene copolymers). Not suitable for polyolefines (polyethylene, polypropylene).

### CHARACTERISTICS

PK inks are fast drying screen printing inks. They show a satin to semi-gloss finish and mild odour. Due to their high pigmentation they show good opacity, an important property for screen printing on dark substrates.

Screen printing inks PK are weather resistant. However, due to their pigmentation PK 60 (white) and shades with a high content of white may chalk in weathering conditions. When PK inks are not printed behind glass but onto acrylic glass, i.e. the ink layer is outside, the use of a clear overprint varnish (PK 70/36) is recommended. Due to their satin finish and the involved dirty appearance PK inks are mostly printed on the back of the acrylic glass instead of the front. For screen printing onto the front side of the transparent mainly gloss inks (f.e. HG, A) are used.

Due to the aggressive solvents contained in PK inks, plastics with a tendency to surface tension cracks may only be printed in unformed condition. Because of surface tension corrosion this also applies too injection mouldings (especially polystyrene and acrylic glass).

### PIGMENTS AND LIGHT FASTNESS

PK inks only contain pigments with a light fastness of 7-8 according to wool scale (DIN 16 525).

The colour shades of PK-NT inks show heavy-metal free pigmentation and correspond to the requirements of EN 71, part 3, safety of toys, migration of certain elements.

### ADJUSTMENT FOR SCREEN PRINTING

Prior to processing, screen printing inks PK are adjusted using their corresponding thinners.

<b>Thinner VD 50</b>	for machine printing
<b>Retarder VZ 10</b>	for manual printing
<b>Retarder VZ 20</b>	for printing of fine details

Thinner VD 60 well as retarders VZ 30 and VZ 40 can also be used.

### ADJUSTMENT FOR SPRAYING

Often spray coating is required for acrylic glass decorations. Spray thinner PVSP is used to adjust PK inks to spraying consistency.

### DRYING

PK inks are physically drying inks, i.e. they dry by evaporation of solvents. Drying time is approx. 20-25°C (68 –77°F). Drying time will be reduced to approx. 60-80 seconds in a continuous drying at a temperature of approx. 40-50°C (104-122°F).

Drying will take longer for multi-layer applications.

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## **BRONZE INKS**

For printing of metallic decorative inks the bronze pastes B 75 to B 79 are available.

Bronze pastes are mixed with bronze binder PK/B prior to processing.

Mixing ratios (parts by weight) should be:

Gold bronze paste:	PK/B	=	1 : 3-4
Silver bronze paste:	PK/B	=	1 : 4-5

If bronze inks have to be overprinted with pigments screen inks or clears adhesion is often insufficient. In such cases it is suitable to keep the bronze content as low as possible in order to improve abrasion resistance of the print.

Due to the influence of humidity and oxidation components in the air, bronze prints tend to oxidise. Especially gold, copper and bronze prints will then be unattractive. Overprinting the bronze screen print with PK 70, PK 70/36 or HG 70 will delay this oxidation process for some time.

In all cases it is essential to check overprintability!

Furthermore, relatively outdoor resistant bronzes (AB-bronzes) are available. These bronzes are ready to use. Compared to mixtures of regular bronzes and binder AB bronzes have a better storage stability.

## **THREE AND FOUR COLOUR PROCESS PRINTING**

The transparent process shades with a very low specific gravity can be easily processed. They are available in the Europe process colours (PK 180, PK 181, PK 182). Due to the high light fastness of the pigments used complete match to the Europe scale could not be achieved.

Depending on fineness of the halftone, mesh count, squeegee hardness etc. these colour shades have to be mixed with up to 100% transparent paste PK/TP. Mixing ratio to of halftone ink to transparent paste should be determined in pre-tests. For grey shades or gravure prints black PK 65 is used, which has to be reduced with PK/TP as well.

Besides retarders VZ 20, VZ 10, VZ 20, VZ 30 and VZ 40 the process shades can also be retarded using retarder paste VP/K.

## **WELDABILITY AND FORMING PROPERTIES**

Screen printing inks PK are not weldable. For welding of printed surfaces among each other or with foil material use J inks only.

PK inks printed onto suitable material show good forming properties. As the screen ink film does not tend to stick to the forming punch this ink type is suitable for matrix and negative matrix forming of thermoplastics. White or ink shades with a high content of white may require addition of approx. 10% binder PK/B or 5% elastifying agent W 1.

Pretests are necessary for all forming applications.

## **CLEANING OF STENCILS AND TOOLS**

Screen printing inks PK can easily be removed from stencils and tools using our universal cleaning agents URS or URS 3.

## **PACKING**

Screen printing inks PK are available in 1 and 5 liter containers (approx. 1.06 qts. and 1.35 gallons).

## **SHELF LIFE**

For information regarding shelf life please see tin label.

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## CLASSIFICATION

Read material safety data sheets prior to processing.

The material safety data sheets according to Regulation (EC) No. 1907/2006 contain classification according to preparations directive (1999/45/EC) as well as instructions for precautions when processing, handling and storing as well as first aid.

The information given in the material safety data sheet refers to processing as described in this product data sheet.

STANDARD SHADES			
citric yellow	PK 10/NT	turquoise	PK 34/NT
medium yellow	PK 11/NT	violet	PK 37/NT
dark yellow	PK 12/NT	light green	PK 40/NT
orange	PK 15/NT	fir green	PK 41/NT
ochre yellow	PK 17/NT	brilliant green	PK 42/NT
light red	PK 20/NT	blackboard green	PK 47/NT
red bright	PK 21/NT	light brown	PK 50/NT
carmine red	PK 22/NT	dark brown	PK 51/NT
pink	PK 25/NT	white	PK 60/NT
light blue	PK 30/NT	white, highly opaque	PK 60/HD-NT
medium blue	PK 31/NT	black	PK 65/NT
ultra marine	PK 32/NT	black, highly opaque	PK 65/HD-NT
dark blue	PK 33/NT	blackboard black	PK 67/NT
PROCESS COLOURS ACCORDING TO EUROPE SCALE			
yellow	PK 180/NT		
magenta	PK 181/NT		
cyan	PK 182/NT		
SPECIAL INKS			
transparent paste	PK/TP	top coating, mat	PK 70/MT
bronze binder	PK/B	obliterating grey	PK 74

*The statements in our product and safety data sheets are based on our present experiences, however they are no assurance of product properties and do not justify a contractual legal relationship. They serve to advise our business associates, but it is absolutely necessary to make your own printing tests under local conditions, with regard to the intended purpose prior to starting the job. - All former product data sheets are no longer valid. APRIL 2008 – VERSION No. 6*

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